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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Kern W. Wong
Serial No.:	10/075,832
Filed:	February 12, 2002
For:	APPARATUS FOR SOCKETING AND TESTING INTEGRATED CIRCUITS AND METHODS OF OPERATING THE SAME
Group No.:	2829
Examiner:	Russell M. Kobert

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPEAL BRIEF

The Appellant has appealed to the Board of Patent Appeals and Interferences from the decision of the Examiner dated April 8, 2004, finally rejecting Claims 1-20. The Appellant filed a Notice of Appeal on July 8, 2004, which was received on July 12, 2004. The Appellant respectfully submits this brief on appeal with the statutory fee of $340.00.

REAL PARTY IN INTEREST

This application is currently owned by National Semiconductor Corporation as indicated by an assignment recorded on February 12, 2002 in the Assignment Records of the United States Patent and Trademark Office at Reel 012617, Frame 0375.

RELATED APPEALS AND INTERFERENCES

There are no known appeals or interferences that will directly affect, be directly affected by, or have a bearing on the Board's decision in this pending appeal.

STATUS OF CLAIMS

Claims 1-20 have been rejected pursuant to a final Office Action dated April 8, 2004. Claims 1-20 are presented for appeal.

STATUS OF AMENDMENTS

The Appellant filed a response to the April 8, 2004 Office Action on June 1, 2004. The Examiner refused to enter the response pursuant to an Advisory Action dated June 15, 2004.

SUMMARY OF CLAIMED SUBJECT MATTER

Regarding Claim 1, an apparatus 100 is used to socket and test integrated circuits. (*Application, Page 8, Lines 8-14*). The apparatus 100 includes an air machine 105 that controllably provides a thermally-varying air flow. (*Application, Page 8, Lines 16-17*). The apparatus 100 also

includes a housing 110, which has a printed circuit board (PCB) 130 and a controller 145. (*Application, Page 9, Lines 1-4*). The printed circuit board 130 is capable of receiving a device under test (DUT) 135. (*Application, Page 12, Lines 6-13*). The controller 145 is capable of controlling the testing of the device under test 135. (*Application, Page 4, Lines 12-13*). The air machine 105 is associable with the housing 110 to form an at least substantially air-tight chamber. (*Application, Page 14, Lines 30-22*). The air-tight chamber ensconces the device under test 135. (*Application, Page 4, Lines 13-15*).

Regarding Claim 7, a method 400 of operating an apparatus 100 for socketing and testing integrated circuits is provided. (*Application, Page 14, Lines 5-8*). The apparatus 100 includes an air machine 105 and a housing 110, where the housing 110 includes a printed circuit board 130 and a controller 145. (*Application, Page 9, Lines 1-4*). The method 400 includes receiving a device under test 135. (*Application, Page 14, Lines 17-19*). The method 400 also includes associating the air machine 105 with the housing 110 to form an at least substantially air-tight chamber. (*Application, Page 14, Lines 20-22; Page 4, Lines 13-15*). The air machine is capable of controllably providing a thermally-varying air flow. (*Application, Page 8, Lines 16-17*).

Regarding Claim 13, an apparatus 100 for socketing and testing integrated circuits includes an air machine 105 that is capable of controllably providing a thermally-varying air flow. (*Application, Page 8, Lines 16-17*). The apparatus 100 also includes a housing 110, which includes a universal printed circuit board 130 capable of receiving a device under test 135, a controller 145 capable of controlling testing of the device under test 135, and a power supply 150. (*Application, Page 8, Lines 1-4; Page 12, Lines 6-13;Page 4, Lines 12-13*). The air machine 105 is associable

with the housing 110 to form an at least substantially air-tight chamber ensconcing the device under test 135. (*Application, Page 14, Lines 20-22; Page 4, Lines 13-15*).

GROUNDS OF REJECTION

1. Claims 1-20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,451,884.

ARGUMENT

I. GROUND OF REJECTION #1 (§ 102 REJECTION)

The rejection of Claims 1-20 under 35 U.S.C. § 102(b) is improper and should be withdrawn.

A. OVERVIEW

Claims 1-20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,451,884 to Sauerland ("*Sauerland*").

A copy of the claims is provided in Appendix A. A copy of *Sauerland* is provided in Appendix B.

B. STANDARD

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. (*MPEP § 2131; In re Bond, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567*

(Fed. Cir. 1990)). Anticipation is only shown where each and every limitation of the claimed invention is found in a single prior art reference. (*MPEP § 2131; In re Donohue, 766 F.2d 531, 534, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985)*).

C. THE *SAUERLAND* REFERENCE

Sauerland recites a system for testing electronic components. (*Col. 1, Lines 7-8*). The electronic components (element 10) are placed in a temperature chamber (element 18). (*Col. 5, Lines 48-51; Figure 2*). A "source of coolant" (element 20) controlled by a valve (element 22) releases a coolant, which is circulated through a central inlet bore (element 24) of the temperature chamber by a fan (element 26). (*Col. 6, Lines 5-17*). The coolant could represent "[a]ir of a selected temperature." (*Abstract*). Once cooled, the components are tested. (*Col. 6, Lines 18-26*). After that, a heating coil (element 34) within the chamber heats the air in the chamber to a higher temperature, and the test is repeated. (*Col. 6, Lines 27-33*).

D. CLAIMS 1, 3-7, AND 9-19

Claim 1 recites an apparatus for socketing and testing integrates circuits, which includes:

> an air machine that is operable to controllably provide a thermally-varying air flow; and
>
> a housing comprising (i) a printed circuit board that is operable to receive a device under test, and (ii) a controller that is operable to control testing of the received device under test;
>
> wherein said air machine is associable with said housing to form an at least substantially air-tight chamber ensconcing the received device under test.

The Examiner asserts that *Sauerland* discloses the use of an "air machine" that is "operable to controllably provide a thermally-varying air flow." (*04/08/04 Office Action, Page 3, Third paragraph*). The Examiner also asserts that *Sauerland* discloses the use of a "housing" that includes a "controller" capable of testing a device under test. (*04/08/04 Office Action, Page 3, Fourth paragraph*). In addition, the Examiner asserts that *Sauerland* discloses that the air machine is "associable with the housing to form an at least substantially air-tight chamber ensconcing the received device under test." (*04/08/04 Office Action, Page 3, Fifth paragraph*).

The Examiner improperly interprets *Sauerland*. *Sauerland* in no way anticipates these elements of Claim 1.

First, the system of *Sauerland* operates by pumping a coolant (such as air "of a selected temperature") into a chamber. Once cooled, the components in the chamber of *Sauerland* are tested. After that, a heating coil in the chamber of *Sauerland* heats the air inside the chamber. It is crystal clear here that the only air pumped into the test chamber of *Sauerland* is air "of a selected temperature." Once in the test chamber, the previously pumped air is heated by a heating coil. There is no air of a different temperature pumped into the test chamber during the tests. As a result, the "source of coolant" of *Sauerland* fails to anticipate an "air machine that is operable to controllably provide a thermally-varying air flow" as recited in Claim 1.

The Examiner asserts that the system of *Sauerland* is "capable of performing the operation of thermally-varying air flow because Sauerland teaches the use of a temperature sensor for monitoring temperature conditions in combination with heating and cooling means. Additionally, the thermal changes described in Sauerland from a cold state to a hot state or between a preselected number of

temperatures ... is considered to be a type of thermal variation." (*04/08/04 Office Action, Page 2, Second paragraph*).

The Examiner has admitted here that *Sauerland* fails to anticipate the "air machine" recited in Claim 1. Claim 1 recites that the air machine is operable to controllably provide a thermally-varying air flow. As described above, *Sauerland* lacks any mention that its "source of coolant" is capable of providing a thermally-varying air flow. Instead, as acknowledged by the Examiner, *Sauerland* uses components inside the test chamber and separate from the coolant source to heat the air. Because of this, the "source of coolant" of *Sauerland* cannot anticipate the "air machine" recited in Claim 1.

Second, the Examiner identifies element 32 of *Sauerland* as anticipating the "controller" of Claim 1. However, *Sauerland* clearly shows that element 32 does not form part of the temperature chamber (element 18). As a result, *Sauerland* fails to anticipate a "housing" that includes a "printed circuit board that is operable to receive a device under test" and a "controller that is operable to control testing of the received device under test" as recited in Claim 1.

Third, the Examiner fails to identify any portion of *Sauerland* disclosing an "air machine" that is "associable with [a] housing to form an at least substantially air-tight chamber ensconcing the received device under test" as recited in Claim 1. In fact, the Examiner makes no attempt to identify any portion of *Sauerland* as disclosing these elements of Claim 1.

For these reasons, the Examiner has failed to establish that *Sauerland* anticipates the Appellant's invention as recited in Claim 1 (and its dependent claims). For the same reasons, the Examiner has failed to establish that *Sauerland* anticipates the Appellant's invention as recited in Claims 7 and 13 (and their dependent claims).

Accordingly, the Appellant respectfully requests that the final rejection of Claims 1, 3-7, and 9-19 be withdrawn and that Claims 1, 3-7, and 9-19 be passed to allowance.

E. CLAIMS 2 AND 8

Claims 2 and 8 depend from Claims 1 and 7, respectively. Claims 2 and 8 are patentable for the reasons given above and in light of their own recitations.

Claims 2 and 8 recite that the "housing" further includes a "power supply." *Sauerland* fails to disclose that the temperature chamber (element 18) includes a power supply. The Examiner asserts that a power supply is an "inherent characteristic of controller 32" in *Sauerland*. (*04/08/04 Office Action, Page 3, Fourth paragraph*). However, as noted above, element 32 of *Sauerland* does not form part of any "housing." Moreover, there is no disclosure in *Sauerland* of a power supply that would form part of a "housing."

For these reasons, the Examiner has failed to establish that *Sauerland* anticipates the Appellant's invention as recited in Claims 2 and 8.

Accordingly, the Appellant respectfully requests that the final rejection of Claims 2 and 8 be withdrawn and that Claims 2 and 8 be passed to allowance.

F. CLAIM 20

Claim 20 depends from Claim 13. Claim 20 is patentable for the reasons given above and in light of its own recitations.

Claim 20 recites that a "leadless socket" is "self-registering." The Examiner asserts that this

element is "inherent" in *Sauerland*. (*04/08/04 Office Action, Page 4, Second paragraph*). To establish inherency, the burden is on the Patent Office to present evidence clearly showing that "the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." (*MPEP § 2112*). The Examiner has provided absolutely no evidence or explanation as to why *Sauerland* must operate using "self-registering" leadless sockets. As a result, the Examiner has failed to show that *Sauerland* inherently discloses the use of "self-registering" leadless sockets.

For these reasons, the Examiner has failed to establish that *Sauerland* anticipates the Appellant's invention as recited in Claim 20.

Accordingly, the Appellant respectfully requests that the final rejection of Claim 20 be withdrawn and that Claim 20 be passed to allowance.

SUMMARY

The Appellant has demonstrated that the present invention as claimed is clearly distinguishable over the prior art cited of record. Therefore, the Appellant respectfully requests the Board of Patent Appeals and Interferences to reverse the final rejection of the Examiner and instruct the Examiner to issue a notice of allowance of all claims.

The Appellant has enclosed the appropriate fee to cover the cost of this Appeal Brief and a one (1) month extension of time. The Appellant does not believe that any additional fees are due. However, the Commissioner is hereby authorized to charge any additional fees (including any additional extension of time fees) or credit any overpayments to Davis Munck Deposit Account No. 50-0208.

Respectfully submitted,

DAVIS MUNCK, P.C.

Date: Oct. 12, 2004

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APPENDIX A

PENDING CLAIMS

1. An apparatus for socketing and testing integrates circuits comprising:
an air machine that is operable to controllably provide a thermally-varying air flow; and
a housing comprising (i) a printed circuit board that is operable to receive a device under test, and (ii) a controller that is operable to control testing of the received device under test;
wherein said air machine is associable with said housing to form an at least substantially air-tight chamber ensconcing the received device under test.

2. The apparatus as set forth in Claim 1 wherein said housing further comprises a power supply.

3. The apparatus as set forth in Claim 1 wherein said printed circuit board is circular shaped.

4. The apparatus as set forth in Claim 3 wherein said housing further comprises input/output (I/O) connectors that are placed circumferentially and symmetrically near the edge of the printed circuit board.

5. The apparatus as set forth in Claim 3 wherein said printed circuit board comprises a leadless socket.

6. The apparatus as set forth in Claim 5 wherein said leadless socket is operable to receive the device under test in the center of the Printed circuit board.

7. A method of operating an apparatus for socketing and testing integrated circuits, said apparatus comprising an air machine and a housing, said housing comprising a printed circuit board and a controller, said method comprising the steps of:
(i) receiving a device under test, and
(ii) associating said air machine with said housing to form an at least substantially air-tight chamber ensconcing the received device under test, the air machine operable to controllably provide a thermally-varying air flow.

8. The method as set forth in Claim 7 wherein said housing further comprises a power supply, and said method comprising the step of powering on the apparatus.

9. The method as set forth in Claim 7 wherein said printed circuit board is circular shaped, and said method comprising the step of controlling testing of the received device under test with said controller.

10. The method as set forth in Claim 9 wherein said housing further comprises input/output (I/O) connectors that are placed circumferentially and symmetrically near the edge of the printed circuit board.

11. The method as set forth in Claim 9 wherein said printed circuit board comprises a leadless socket.

12. The method as set forth in Claim 11 wherein said leadless socket is operable to receive the device under test in the center of the Printed circuit board.

13. An apparatus for socketing and testing integrated circuits comprising:

an air machine that is operable to controllably provide a thermally-varying air flow; and

a housing comprising (i) a universal printed circuit board that is operable to receive a device under test, (ii) a controller that is operable to control testing of the received device under test, and (iii) a power supply;

wherein said air machine is associable with said housing to form an at least substantially air-tight chamber ensconcing the received device under test.

14. The apparatus as set forth in Claim 13 wherein said power supply is a battery.

15. The apparatus as set forth in Claim 13 wherein said universal printed circuit board is circular shaped.

16. The apparatus as set forth in Claim 15 wherein said housing further comprises input/output (I/O) connectors that are placed circumferentially and symmetrically near the edge of the universal printed circuit board.

17. The apparatus as set forth in Claim 15 wherein said printed circuit board comprises a leadless socket.

18. The apparatus as set forth in Claim 17 wherein said leadless socket is operable to receive the device under test in the center of the printed circuit board.

19. The apparatus as set forth in Claim 13 wherein the device under test is one of a radio frequency (RF) integrated circuit and a high-frequency integrated circuit.

20. The apparatus as set forth in Claim 17 wherein said leadless socket is self-registering.

APPENDIX B

***Sauerland* Reference**

U.S. Patent No. 5,451,884